PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Shigeru ASHIDA, et al.

Appln. No.: 10/523,829

Confirmation No.: 3991

Filed: February 8, 2005

For: ELECTRICAL CONNECTOR AND CABLE

Docket No: Q86138

Group Art Unit: 2831

Examiner: Chau N. NGUYEN

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

UNDER 37 C.F.R. § 41.37

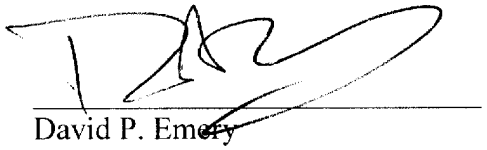
MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief issued June 5, 2007, Applicant is submitting herewith a replacement brief which maps the independent claims 13, 14, 15 and 19 to the specification by page number and line number, as well as to the drawings

Although Applicant believes that no fee is due, the USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q86138
Shigeru ASHIDA, et al.	
Appln. No.: 10/523,829	Group Art Unit: 2831
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For: ELECTRICAL CONNECTOR AND CABLE

RESPONSE TO NON-COMPLIANT APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

Table of Contents

I. REAL PARTY IN INTEREST

The real party in interest is Fujikura, Ltd., the assignee of the present application. The assignment was recorded on February 8, 2005 at reel 016795, frame 0747.

II. RELATED APPEALS AND INTERFERENCES

Upon information and belief, there are no other prior or pending appeals, interferences or judicial proceedings known to the Appellants' representative or the Assignee that may be related to, be directly affected by, or have a bearing on the Board's decision in the Appeal.

III. STATUS OF CLAIMS

Claims 1-20 are pending in the application, stand rejected, and are all the claims that are the subject of this appeal. Specifically, claims 1-17, 19 and 20 stand rejected under 35 U.S.C. § 112, second paragraph; claims 1-4, 6-10 and 14-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore et al. (US 6,064,003) in view of Knapp et al. (US 4,521,064); claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Knapp in further view of Hutchinson (US 4,070,084); claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore, in view of Knapp in further view of Urushibata et al. (US 5,057,650); claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore, in view of Knapp in further view of Bates (US 4,864,081); claims 13 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Beamenderfer et al. (US 4,834,674) in view of Knapp; claims 18 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ichikawa et al. (US 5,780,774) in view of Moore and Knapp; and claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ichikawa in view of Bates and Knapp.

All of the claims pending in the present application are set forth in their entirety in Appendix A, attached to this Brief on Appeal.

IV. STATUS OF AMENDMENTS

A Response under 37 C.F.R. § 1.116 having no claim amendments was filed in response to the Final Office Action of March 29, 2006. Thus, the claims stand as amended in the Amendment under 37 C.F.R. § 1.111, filed February 16, 2006. Accordingly, there are no outstanding, non-entered claim amendments.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention relates to an electrical connector in a table, and more particularly relates to an electrical connector and a cable for signal transmission having certain impedance characteristics. *See* specification at page 1. The concise description of the claimed subject matter of the present invention is set forth below, with regard to each of the independent claims 1, 8, 13-15 and 17-19. However, such reference, unless otherwise indicated, is intended to point out the described exemplary embodiment; it is not intended to limit the scope of the claims to only the express embodiment cited below.

According to one aspect of the invention, and as set forth in claim one, there is provided and electrical connector comprising (with reference to figures 1-3)(specification pages 9-11):

a terminal (11) fixed to a connector housing (10);

a conductor (23) exposed from a covering (22,29) and having a connection portion (81) connected to a connection portion (23) of the terminal (11);

a foam element (31) at a foam ratio (*see* specification at page 11, line 4) selected to substantially match the impedance of the connection portion (81) with the covering (22,29) of the conductor (23), located around respective connection portions of the conductor and the terminal.

According to another aspect, and as set forth in claim 8, of fabricating an electrical connector is provided, the method comprising (with reference to figure 7 and the specification at pp. 13-14):

connecting a connection portion (81) of a terminal (11) and a connection portion (81) of a conductor (23) exposed from a covering (22) to each other (S3, S6); and

covering respective connection portions (81) of the terminal (11) and the conductor (23) with a foam element (31) at a foam ratio selected to substantially match the impedance of the connection portion (81) with the covering (22) of the conductor (23).

According to another aspect, and as set forth in claim 13, there is provided an electrical connector comprising (with reference to figures 1-4B):

a cable (20) comprising: (*see* p. 9, lines 15-20)

an electrical wire (21) including a conductor (23) exposed from a first covering (22);

a drain wire (24) arrayed parallel to the electric wire (21); and

a jacket (29)holding the electric wire (21) and the drain wire (24);

a connection terminal (11) having a connection portion (81) connected to an end of the conductor (23);

an earth terminal (11) having a connection portion (81) connected to an end of the drain wire (24);

a connector housing (10)receiving the connection terminal (11) and the earth terminal (11);

a second covering (32)(*see* specification, page 15, lines 11-20) located around the foam resin (31), and

a foam resin (31) having a foam ratio selected to substantially match the impedance of the connection portion (81) with the first (22) and second coverings (32) of the conductor, located around the end of the conductor, the connection portion (81)of the connection terminal 11), the end of the drain wire (24) and the connection portion (81) of the earth terminal (11) (*see* specification, page 15, lines 11-28).

According to another aspect of the invention, and as set forth in claim 14, there is provided a cable comprising (with reference to figures 1-4B and 13)(*see* specification, pages 14, line 2 through page 15, line 10):

an electric wire (21) having a conductor (23) exposed from a covering (22);

a connector (5) including a terminal (11) having a connection portion (81) connected to a connection portion (81) of the conductor (23) and fixed to a connector housing (60); and

a foam element (31)at a foam ratio selected to substantially match the impedance of the connection portion (81) with the covering (22) of the conductor (23), located around respective connection portions (81) of the conductor and the terminal.

According to another aspect of the invention, a connector for a signal transmission cable is provided, comprising (with reference to figures 1-3, 4A and 13))(*see* specification, pages 14, line 2 through page 15, line 10):

a connector housing (60);

a terminal (11) fixed to the connector housing (60);

a cable conductor (23)electrically connected to the terminal (11) by welding within the connector housing (60); and

a foam element (31) having a foam ratio selected to substantially match the impedance of connection portions (81) of the conductor (23) with the covering (22) of the conductor (23), the covering connection portions (81) of the terminal and the cable conductor within the connector housing.

According to another aspect of the invention, and as set forth in claim 17, a method of fabricating a connector for a signal transmission cable is provided, comprising (with reference to figures 7, 8A and 8B)(*see* specification, page 13, line 13 through page 14, line 12):

welding a terminal (11) and a cable conductor (23)to each other for connection (S3, S6);

preparing a foamable resin (31);

locating connection portions (81) of the terminal (11) and the cable conductor (23) in a die (*see* specification at pp. 13-16);

feeding the foamable resin (S4) into the die for extrusion to cover the connected terminal and the conductor from therearound with a foam element (31) at a predetermined foam ratio;

molding a resin (S5) for the connector housing (60) around the terminal (11), the foam element (31), and the cable conductor (23) exposed from the covering (22), thus to form a connector housing in a predetermined shape.

According to another aspect of the invention, and as set forth in claim 18, a method of fabricating a connector for a signal transmission cable is provided, comprising (with reference to figures 7, and 12; specification pp. 17, lines 2-20):

welding (S6) a terminal (11) and a cable conductor (23) to each other for connection;

forming a pair of foam resin (33A, 33B) covering members preliminarily formed into shapes which conform to an upper half shape and a lower half shape of connection portions (81) of the terminal and the cable conductor;

fitting said pair of covering members (33A, 33B) around the connection portions (81) of the terminal (11) and the cable conductor (23);

molding a resin for a connector housing (60) around the terminal (11), the covering members (33A, 33B), and the cable conductor (23) exposed from a covering(22), thus to form the connector housing in a predetermined shape.

According to another aspect of the invention, and as set forth in claim 19, a method of fabricating a connector for a signal transmission cable is provided, comprising (with reference to figures 7, 12) (*see* specification, page 17, lines 21 through page 18, line 9):

welding (S6) a terminal (11) and a cable conductor (23) for connection;

preparing a foam resin tape (34);

winding the foam resin tape (34) a predetermined number of times around connection portions (81) of the terminal and the cable conductor to cover the connection portions (81);

molding a resin for a connector housing (60) around the terminal (11), the foam resin tape (34), and the cable conductor (23) exposed from a covering(11), thus to form a connector housing (60) in a predetermined shape,

wherein the foam resin tape (34) has a predetermined foam ratio selected to substantially match the impedance of the connection portions (81) with the covering (22) of the conductor.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1-17, 19 and 20 are properly rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

B. Whether claims 1-4, 6-10 and 14-16 are unpatentable under 35 U.S.C. § 103(a) over Moore et al. (US 6,064,003; "Moore") in view of Knapp et al. (US 4,521,064; "Knapp").

C. Whether claim 5 is unpatentable under 35 U.S.C. § 103(a) over Moore in view of Knapp in further view of Hutchison (US 4,070,084).

D. Whether claim 11 is unpatentable under 35 U.S.C. § 103(a) over Moore in view of Knapp, in further view of Urushibata et al. (US 5,057,650; "Urushibata").

E. Whether claim 12 is unpatentable under 35 U.S.C. § 103(a) over Moore in view of Knapp in further view of Bates (US 4,864,081).

F. Whether claims 13 and 17 are unpatentable under 35 U.S.C. § 103(a) over Beamenderfer et al (4,834,674; "Beamenderfer") in view of Knapp.

G. Whether claims 18 and 20 are unpatentable under 35 U.S.C. § 103(a) over Ichikawa et al. (5,780,774; "Ichikawa") in view of Moore and Knapp.

H. Whether claim 19 is unpatentable under 35 U.S.C. § 103(a) over Ichikawa in view of Bates and Knapp.

VII. ARGUMENT

At least for the reasons discussed below, Appellants submit that the rejections of the claims on appeal are improper, and reversal of each ground of rejection is respectfully requested. Appellants address the rejections at issue as follows:

A. Claim Rejections - 35 U.S.C. § 112, Second Paragraph - Claims 1-17, 19 and 20

The Examiner rejected claims 1-17, 19 and 20 under § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention. Appellants submit that the Examiner's rejection is in error because the Examiner has relied on only a portion of the present Specification, choosing to otherwise ignore the portions that provide clear support for the claim feature at issue.

In particular, the Examiner alleges that the recitation within claims 1, 8, 13-15, 17, 19 and 20 that states, "a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor," is unclear and confusing. (Office Action, pg. 2) Further, the Examiner notes that from Appellants disclosure it is understood that "a foam element at a foam ratio selected to substantially match the impedance of the covering of the conductor." Additionally, the Examiner indicates that claims 2-7, 9-12 and 16 are rejected because of their dependency.

While Appellants agree that the present Specification states "a foam element at a foam ratio selected to substantially match the impedance of the covering of the conductor," the present

Specification also clearly supports and provides a clear meaning of the recitation rejected by the Examiner. For example, the present specification provides:

> (1) when the insulator is removed from the terminal, and the conductor is exposed to connect to the connection terminal of the electrical conductor, the impedance of this terminal becomes different from the impedance of the insulation covered portion (Specification, pg. 1, last para.);
>
> (2) "[a]n object of the invention is to provide an electrical connector, which has an impedance controlled to an appropriate predetermined value, thus optimizing the impedance of the electrical connector" (Specification, pg. 3, second para.);
>
> (3) the foam resin 31 includes uniformly dispersed gas bubbles 31a and the gas bubbles 31a function as a capacitance or impedance control means (Specification, pg. 10, second para); and
>
> (4) "[m]oreover, coincidence of the impedance in the connection portion 81 with approximation to the impedance of coverings 22 and 29 reduces any loss on the connection portion 81" (Specification, pg. 11, second para.).

Thus, the recitation is clear in light of the Specification. One of skill in the art would recognize that the Specification teaches that the foam ratio of the foam can be used to control impedance. Furthermore, the Specification makes clear that coincidence of the impedance of the connection portion with approximation to the impedance of the coverings reduces any loss in the connection portion. Finally, because removing the insulator from the terminal changes the impedance, one of ordinary skill, faced with the teachings of the present Specification would select a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor, as recited and logically supported by the present Specification.

While the Examiner seems to limit Appellants' disclosure to "a foam element at a foam ratio selected to substantially match the impedance of the covering of the conductor," Appellants disclosure also provides clear support and understanding such that one of ordinary skill in the art would also modify the connection portion to approximately match the impedance of the coverings to reduce any loss (see point (4) above).

Thus, Appellants respectfully submit that this rejection is in error and should be withdrawn.

B. Claim Rejections - 35 U.S.C. § 103 (a) -Claims 1-4, 6-10 and 14-16

The Examiner rejected claims 1-4, 6-10 and 14-16 as being unpatentable over Moore et al. (US 6,064,003; "Moore") in view of Knapp et al. (US 4,521,064; "Knapp"). Appellants respectfully traverse this rejection because the Examiner has failed to establish proper *prima facie* obviousness, and further, even if combined as the Examiner has attempted, neither Moore nor Knapp, alone or in combination teach or suggest, "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor," as recited in each of independent claims 1, 8, 14 and 15.

Failure To Provide A Sufficient Motivation To Combine

The Examiner alleges that Moore discloses most of the features of each of independent claims 1, 8, 14 and 15, but concedes that Moore fails to disclose "the foam element having a foam ratio selected to substantially match the impedance of the covering of the conductor. (Office Action, pg. 4, second para.) To compensate for the deficiency of Moore, the Examiner

applies Knapp alleging that Knapp discloses an electrical connector comprising a foam element which has a foam ratio of 35%-55%. Furthermore, as a motivation to combine the references, the Examiner alleges that it would have been obvious to one skilled in the art to provide the foam element of Moore to have an impedance being closer to the impedance of the conductor, in other words to provide the foam element of Moore with a foam ratio of 35%-55% as taught by Knapp to meet the specific use of the resulting device since lower ratio would reduce the moisture-proof qualities and higher ratio would reduce the compressibility of the material. (*Office Action* of March 29, 2006, p. 4-5) Finally, the Examiner states that the modified assembly of Moore also discloses the foam element including a resin, wherein the impedance of the foam element being closer to impedance of the covering. (*Id.*)

Appellants respectfully submit that the Examiner is guilty of classic hindsight reconstruction where the claimed invention is trivialized because the Examiner can find some of the individual elements existing in a number of prior art references. The proposed motivating factor - "to have an impedance being closer to the impedance of the covering of the conductor" - is found nowhere in any of the prior art references cited by the Examiner. Moreover, this is a specific teaching from Appellants' own disclosure. In support of Appellants' position, it is noted that the Federal Circuit is unwavering in its condemnation of hindsight logic. In *Grain Processing Corp. v. American Maize Products Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988), the Federal Circuit stated:

> Care must be taken to avoid hindsight reconstruction using the patent in suit as a guide through the maze of prior art references

> combining the right references in the right way so as to achieve the result of the claims in suit.

(*Id.*)

Notably, neither Moore nor Knapp disclose matching any impedance values. Moreover, neither reference even mentions the term "impedance" within its disclosure. Thus, because the motivation provided is only found within Appellant's own disclosure, and the Examiner has provided no objective source for the motivation, teaching or suggestion to combine, Appellant submits that the Examiner has failed to establish *prima facie* obviousness.

Additionally, in the Response to Arguments section, the Examiner improperly relies on *In re Dillion*, 16 USPQ2d 1897, stating that the Examiner's burden of establishing *prima facie* obviousness is satisfied by a showing of structural similarity between the claims and the prior art; it does not require a showing of some suggestion of expectation in the prior art that the structurally similar matter will have the same or a similar utility as that discovered by the Appellant. While *Dillion* may stand for the proposition that foam having a similar structure to some other foam may have the same impedance value, this structural similarity fails to provide any support for the recitation of selecting a foam ratio to substantially match the impedance of the connection portions with ***the covering of the conductor***. There is simply no support that the foam used in Knapp should match the impedance of the connection portions with the covering of the conductor. The most that *Dillion* supports is that similar foam ratios will have similar impedance values. Beyond this, the Examiner's application of *Dillion* is misplaced.

Applied Combination Fails to Teach Or Suggest All The Claimed Features

Furthermore, even if combined as the Examiner has attempted, neither Moore nor Knapp, alone or in combination, teach or suggest, "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor," as recited in claims 1, 8, 14 and 15. First, Moore, as conceded by the Examiner, fails to teach or suggest any foam element. Secondly, Knapp, while disclosing a foam material, only teaches or suggests the use of the foam material as a seal against water penetration and ice formation. (col. 3, lines 32-38) There is no teaching or suggestion, or even a remote indication that Knapp or Moore contemplate or are even concerned with matching impedance values.

Additionally, in the Response to Arguments section of the March 29, 2006, Office Action, the Examiner also relies on Appellants Specification to provide support in this rejection. In particular, the Examiner cites an embodiment on page 12, lines 5-7, for support that any foam ratio over 20% will substantially match the impedance of the conductor. (*Office Action* of March 29, 2006, p. 12.). Then, the Examiner analogizes that because Knapp teaches that the foam element should have a foam ratio of 20% or more, Knapp somehow discloses selecting a foam element at a foam ratio to substantially match the impedance of the covering of the conductor. However, Appellants submit that the Examiner analogy is faulty because the portion of Appellants' disclosure relied on fails to support this analogy. Rather, the portion relied on by the Examiner relates to an experimental relationship between various foam ratios and impedance values with regard to the primary mold of cable 1A. (*Specification*, p.11, lines 17-25).

Furthermore, as indicated in FIG. 5, the relationship applies only to the primary mold, as indicated in the legend.

Therefore, not only has the Examiner failed to find any inclination of matching impedance values of the foam element in any prior art reference, but further, the Examiner is attempting to rely on a misplace reading of Appellants' own disclosure to reject the claims.

Because the above noted feature is not taught or suggested in any of the references, this rejection under § 103(a) over Moore in view of Knapp is in error and should be withdrawn.

Thus, Appellants respectfully submit that independent claims 1, 8, 14 and 15 are allowable for at least this reason. Further, dependent claims 2-4, 6-7, 9-10 and 16 are allowable, at least because of their dependency.

C. Claim Rejection - 35 U.S.C. § 103(a) - Claim 5

The Examiner rejected claim 5 as being unpatentable over Moore in view of Knapp in further view of Hutchison (US 4,070,084). Appellant traverses this rejection because the Moore/Knapp/Hutchison combination fails to compensate for the above noted deficiency with regard to the Moore/Knapp combination.

Specifically, Hutchison relates controlling the geometrical relationship between conductors as well as the dielectric constant of a dielectric medium to obtain a desired impedance. (*Hutchison*, col. 1, lines 54-57). However, Hutchison fails to teach or suggest matching the impedance of a foam element to the covering of the conductor. Rather, Hutchison controls the impedance, to match the impedance of a system, not a conductor covering.

Furthermore, Hutchison primarily utilizes the height between the center of a wire and a ground plane to control the impedance. (*Id.* at col. 10-45).

Thus, Appellants respectfully submit that neither Moore, Knapp, nor Hutchison, nor their combined teachings, taken as a whole for what they would have meant to the person of ordinary skill, teach or suggest "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor." The person of ordinary skill would not have (and could not have) been led by the Moore/Knapp/Hutchison combination to the subject matter of independent claim 1, much less to dependent claim 5. Additional, untaught modifications would still have been required. Appellants therefore respectfully submit that claim 5 is allowable, at least because of its dependency from claim 1.

D. Claim Rejection - 35 U.S.C. § 103(a) - Claim 11

The Examiner rejected claim 11 as being unpatentable over Moore in view of Knapp in further view of Urushibata et al. (US 5,057,650; "Urushibata"). Appellants traverse this rejection because the Moore/Knapp/Urushibata combination does not compensate for the above noted deficiency with regard to the Moore/Knapp combination.

Specifically, Urushibata relates to a molded circuit component for connecting lead wires, which includes a body and a protective cover. (*Urushibata*, col. 1, lines 7-10). Urushibata fails to contemplate any impedance values.

Thus, Appellants respectfully submit that neither Moore, Knapp, nor Urushibata, nor their combined teachings, taken as a whole for what they would have meant to the person of

ordinary skill, teach or suggest "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor." The person of ordinary skill would not have (and could not have) been led by the Moore/Knapp/ Urushibata combination to the subject matter of independent claim 1, much less to dependent claim 11. Additional, untaught modifications would still have been required. Appellants therefore respectfully submit that claim 11 is allowable, at least because of its dependency from claim 8.

E. Claim Rejection - 35 U.S.C. § 103(a) -Claim 12

The Examiner rejected claim 12 as being unpatentable over Moore in view of Knapp in further view of Bates (US 4,864,081). Appellants traverse this rejection because the Moore/Knapp/Bates combination does not compensate for the above noted deficiency with regard to the Moore/Knapp combination.

Bates relates to a insulating covering for an undercarpet power cable splice. Bates fails to contemplate any impedance values. (*Abstract*).

Thus, Appellants respectfully submit that neither Moore, Knapp, nor Bates, nor their combined teachings, taken as a whole for what they would have meant to the person of ordinary skill, teach or suggest "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor." The person of ordinary skill would not have (and could not have) been led by the Moore/Knapp/ Bates combination to the subject matter of independent claim 8, much less to dependent claim 12. Additional, untaught modifications

would still have been required. Appellants therefore respectfully submit that claim 12 is allowable, at least because of its dependency from claim 8.

F. Claim Rejections - 35 U.S.C. § 103(a) - Claims 13 and 17

The Examiner rejected claim 13 and 17 as being unpatentable over Beamenderfer et al (4,834,674; "Beamenderfer") in view of Knapp. Appellants traverse this rejection for the same reasons set forth in detail with regard to the rejection of claim 1 under Moore in view of Knapp. In particular, Beamenderfer fails to compensate for the above noted deficiencies with regard to the failure to establish *prima facie* obviousness, and similarly, this combination fails to teach "a foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor," as recited in claims 13 and 17.

As discussed above, Knapp fails to teach or suggest this feature. Furthermore, Beamenderfer is silent with regard to any foam element. Thus, Appellants respectfully submit that claims 13 and 17 are allowable over the applied combination.

G. Claim Rejections - 35 U.S.C. § 103(a) -Claims 18 and 20

The Examiner rejected claims 18 and 20 under § 103(a) as being unpatentable over Ichikawa et al. (5,780,774; "Ichikawa") in view of Moore and Knapp. Appellants respectfully traverse this rejection as follows.

Regarding claim 8, the Examiner alleges that Ichikawa discloses a method of fabricating a connector including forming a pair of resin members preliminarily formed into shapes. (citing FIG. 3) The Examiner also concedes that Ichikawa fails to disclose the pair of resin members

being made of a foam resin and molding a resin around the foam resin members. To compensate for this deficiency, the Examiner applies Moore alleging that it discloses an electrical connector comprising foam resin member 72 covering connection portions of the terminal and a conductor and resin 74 around the foam member 72. Then the Examiner alleges that it would have been obvious to one skilled in the art to use foam resin as taught by Moore et al for the resin members of Ichikawa to provide a water tight seal over the connection portions.

Failure To Provide A Sufficient Motivation To Combine

In contrast, Appellants respectfully submit that one of ordinary skill in the art would not be motivated to replace the resin members of Ichikawa with the foam members of Moore as alleged by the Examiner. In this instance, the Examiner has failed to establish *prima facie* obviousness because the Examiner fails to provide a sufficient motivation to combine the references. Rather, the Examiner merely states in a conclusory fashion that it would have been obvious to one skilled in the art to use foam resin for the resin members of Ichikawa to provide a water tight seal over the connection portions.

However, this suggested motivation lacks any objection support, and further, runs counter to the teachings of Ichikawa. First, Ichikawa teaches an insert molding technique wherein the conductors are insert molded with a synthetic resin material so that a high connection strength can be obtained between the connection portions and the conductors of the electric wire. (col. 2, lines 15-20) No portion of Ichikawa implies that a water-tight seal is even desired. In fact, Ichikawa teaches that the purpose of its disclosed insert molded resin technique is to provide

strength against an axial load. (col. 3, lines 44-50). Thus, one of ordinary skill in the art would not so modify Ichikawa because replacing the resin with foam would destroy the high strength between the connections portions and the conductors as taught by Ichikawa. There is simply no support for modifying Ichikawa as alleged by the Examiner.

Applied Combination Fails to Teach Or Suggest All The Claimed Features

Furthermore, even if combined as alleged, the cited combination fails to teach or suggest "forming a pair of foam resin covering members preliminarily formed into shapes;" "fitting said pair of covering members around the connection portions," and "molding a resin for a connector housing around the terminal, the covering members and the cable conductors," as recited in claim 18. Rather, no reference provides any disclosure related to a pair of foam members. This feature is simply not taught or suggested in any of the applied references. Furthermore, even if the holder 4 and the synthetic resin material 9 could be construed as a pair of foam members, the synthetic resin material is not preliminarily formed and, then, fitted around connection portions. To the contrary, the synthetic resin material 9 is insert molded over the conductors 1 and lead wire 1 are welded together. Thus, because this synthetic resin material 9 is not preliminarily formed and then fitted around the connection portions, the applied combination fails to teach or suggest all the features recited in claim 18.

Thus, Appellants respectfully submit that claim 18 is allowable over the applied combination. Additionally, claim 20 is allowable, at least because of its dependency from claim 18.

With further regard to claim 20, Appellants submit that the applied combination fails to teach or suggest "wherein the foam resin has a predetermined foam ratio selected to substantially match the impedance of the connection portions with a covering of the cable conductor."

Because Ichikawa fails to compensate for the above noted deficiency with regard to the Moore/Knapp combination with regard to claim 1, Appellants respectfully submit that claim 20 is allowable over the applied combination for this additional reason.

H. Claim Rejection - 35 U.S.C. § 103(a) - Claim 19

The Examiner rejected claim 19 as being unpatentable over Ichikawa in view of Bates and Knapp. Appellants respectfully traverse this rejection for reasons identical to those set forth with regard to claim 1. Knapp in combination with Bates and Ichikawa is still deficient in that there is simply no motivation to match any impedance values. Furthermore, Bates and Ichikawa are silent on any impedance values and, further, provide no support for matching any impedance values.

Thus, Appellants submit that independent claim 19 is allowable over the applied combination for at least this reason.

Conclusion

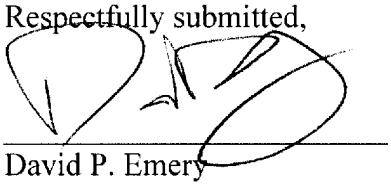
For at least the reasons set forth above, Appellants submit that the outstanding rejections are in error and reversal is respectfully requested.

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

RESPONSE TO NON-COMPLIANT APPEAL BRIEF UNDER 37 C.F.R. § 41.37
Attorney Docket No.: Q86138
U.S. Application No. 10/523,829

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: June 19, 2007

CLAIMS APPENDIX

CLAIMS 1-20 ON APPEAL:

1. An electrical connector comprising:

a terminal fixed to a connector housing;

a conductor exposed from a covering and having a connection portion connected to a connection portion of the terminal;

a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor, located around respective connection portions of the conductor and the terminal.

2. The electrical connector according to claim 1,

wherein the foam element includes a resin,

wherein impedance of the foam element is closer to impedance of the covering, compared with a non-foamed resin.

3. The electrical connector according to claim 1,

wherein the foam element includes a foam resin.

4. The electrical connector according to claim 1,

wherein the foam element functions as a capacitive capacitor.

5. The electrical connector according to claim 1,

wherein respective connection portions of the conductor and the terminal are located in a cavity of the connector housing,

wherein the connector housing is made of a foamed resin.

6. The electrical connector according to claim 1,

wherein the foam ratio of the foam element is greater than 0% and 80% or less.

7. The electrical connector according to claim 1,

wherein the foam element has strength to maintain a structure thereof.

8. A method of fabricating an electrical connector, comprising:

connecting a connection portion of a terminal and a connection portion of a conductor exposed from a covering to each other; and

covering respective connection portions of the terminal and the conductor with a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor.

9. The method of fabricating an electrical connector according to claim 8,

wherein the foam element is controlled to be approximate in impedance to the covering.

10. The method of fabricating an electrical connector according to claim 8,

wherein the foam element is molded to cover respective connection portions.

11. The method of fabricating an electrical connector according to claim 8,

wherein the foam element is formed into a predetermined shape to be fitted to respective connection portions.

12. The method of fabricating an electrical connector according to claim 8,

wherein the foam element is formed as a tape to be wound around respective connection portions.

13. An electrical connector comprising:

a cable comprising:

an electrical wire including a conductor exposed from a first covering;

a drain wire arrayed parallel to the electric wire; and

a jacket holding the electric wire and the drain wire;

a connection terminal having a connection portion connected to an end of the conductor;

an earth terminal having a connection portion connected to an end of the drain wire;

a connector housing receiving the connection terminal and the earth terminal;

a second covering located around the foam resin, and

a foam resin having a foam ratio selected to substantially match the impedance of the connection portion with the first and second coverings of the conductor, located around the end of the conductor, the connection portion of the connection terminal, the end of the drain wire and the connection portion of the earth terminal

.

14. A cable comprising:

an electric wire having a conductor exposed from a covering.

a connector including a terminal having a connection portion connected to a connection portion of the conductor and fixed to a connector housing; and

a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor, located around respective connection portions of the conductor and the terminal.

15. A connector for a signal transmission cable, comprising:

a connector housing;

a terminal fixed to the connector housing;

a cable conductor electrically connected to the terminal by welding within the connector housing; and

a foam element having a foam ratio selected to substantially match the impedance of connection portions of the conductor with the covering of the conductor, the covering connection portions of the terminal and the cable conductor within the connector housing.

16. The connector for a signal transmission cable according to claim 15,

wherein the connection portions include a molten alloy layer.

17. The method of fabricating a connector for a signal transmission cable, comprising:

welding a terminal and a cable conductor to each other for connection;

preparing a foamable resin;

locating connection portions of the terminal and the cable conductor in a die;

feeding the foamable resin into the die for extrusion to cover the connected terminal and the conductor with a foam element at a foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor;

molding a resin for the connector housing around the terminal, the foam element, and the cable conductor exposed from the covering, thus to form a connector housing in a predetermined shape.

18. A method of fabricating a connector for a signal transmission cable, comprising:

welding a terminal and a cable conductor to each other for connection;

forming a pair of foam resin covering members preliminarily formed into shapes which conform to an upper half shape and a lower half shape of connection portions of the terminal and the cable conductor;

fitting said pair of covering members around the connection portions of the terminal and the cable conductor;

molding a resin for a connector housing around the terminal, the covering members, and the cable conductor exposed from a covering, thus to form the connector housing in a predetermined shape.

19. A method of fabricating a connector for a signal transmission cable, comprising:

welding a terminal and a cable conductor for connection;

preparing a foam resin tape;

winding the foam resin tape a predetermined number of times around connection portions of the terminal and the cable conductor to cover the connection portions;

molding a resin for a connector housing around the terminal, the foam resin tape, and the cable conductor exposed from a covering, thus to form a connector housing in a predetermined shape,

wherein the foam resin tape has a predetermined foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor.

20. The method of fabricating a connector for a signal transmission cable, according to claim 18, wherein the foam resin has a predetermined foam ratio selected to substantially match the impedance of the connection portions with a covering of the cable conductor.

EVIDENCE APPENDIX:

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), submitted herewith are copies of any evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

NONE.

RELATED PROCEEDINGS APPENDIX

Submitted herewith are copies of decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).

NONE.